

IN THE CLAIMS

Please cancel claims 1-12, 28-34 and 39-40.

Please replace claims 26, 27, 35, 36, and 48 with the substitute claims below.

Attached hereto is a marked up version of these claims showing the changes.

72 26. (Amended) An expression vector comprising the nucleic acid molecule of claim 21.

27. (Amended) A cell transfected with the vector of claim 26.

05881353 "054304" A3 35. (Amended) A method for identifying a ligand that binds to human hematopoietic stem cells, comprising detecting binding of said ligand with an isolated polypeptide wherein said polypeptide comprises: (1) a first amino acid sequence of AC133 as set forth in SEQ ID NO: 2; (2) a second amino acid sequence wherein said second sequence is a subsequence of said first sequences and is at least 6 amino acids in length; or (3) a third sequence in which at least one amino acid of said first or second sequences is replaced by a different amino acid, with the proviso that said amino acid replacement is a replacement of one acidic residue for another, one basic residue for another, one non-polar residue for another, one uncharged polar residue for another, or one aromatic residue for another, with the proviso that said third sequence is at least 90% identical to said first or second sequence.

36. (Amended) A reagent that specifically binds to an isolated polypeptide wherein said polypeptide comprises: (1) a first amino acid sequence of AC133 as set forth in SEQ ID NO: 2; (2) a second amino acid sequence wherein said second sequence is a subsequence of said first sequences and is at least 6 amino acids in length; or (3) a third sequence in which at least one amino acid of said first or second sequences is replaced by a different amino acid, with the proviso that said amino acid replacement is a replacement of one acidic residue for another, one basic residue for another, one non-

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polar residue for another, one uncharged polar residue for another, or one aromatic residue for another, with the proviso that said third sequence is at least 90% identical to said first or second sequence.

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48. (Amended) A ligand for AC133 identified by the method of claim 35.

Please add the following new claims, claims 52-79.

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52. (New) A method for selecting a population of AC133 positive cells comprising:

contacting a mixed population of cells with an antibody specific for AC133 antigen, and
selecting those cells that bind to said antibody.

53. (New) The method of claim 52, wherein AC133 antigen has the amino acid sequence SEQ ID NO: 2.

54. (New) The method of claim 52, wherein said antibody is a monoclonal antibody.

55. (New) The method of claim 54, wherein said monoclonal antibody is that produced by the hybridoma cell line ATCC HB12346.

56. (New) The method of claim 52, wherein said antibody is fluorochrome conjugated.

57. (New) The method of claim 56, wherein said selecting with said fluorochrome conjugated antibody is by flow cytometry.

58. (New) The method of claim 52, wherein said antibody is conjugated to magnetic particles.

59. (New) The method of claim 58, wherein said selecting with said magnetic particle conjugated antibody is by high gradient magnetic selection.

60. (New) The method of claim 52, wherein said mixed population of cells is derived from bone marrow, fetal bone marrow, liver, umbilical cord, blood, or cytokine mobilized blood.

61. (New) A method of identifying cells that express AC133 antigen comprising:

contacting a population of cells with an antibody specific for AC133 antigen and detecting those cells that bind to said antibody.

62. (New) The method of claim 61, wherein AC133 antigen has the amino acid sequence SEQ ID NO: 2.

63. (New) The method of claim 61, further comprising the step of isolating the detected cells.

64. (New) The method of claim 61, wherein said antibody is a monoclonal antibody.

65. (New) The method of claim 64, wherein said monoclonal antibody is that produced by the hybridoma cell line ATCC HB12346.

66. (New) The method of claim 63, wherein said antibody is fluorochrome conjugated.

67. (New) The method of claim 66, wherein said isolating with said fluorochrome conjugated antibody is by flow cytometry.

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For "Seq ID NO: 2"

68. (New) The method of claim 63, wherein said antibody is conjugated to magnetic particles.

69. (New) The method of claim 68, wherein said isolating with said magnetic particle conjugated antibody is by high gradient magnetic selection.

70. (New) The method of claim 61, wherein said population of cells is derived from bone marrow, fetal bone marrow, liver, umbilical cord, blood, or cytokine mobilized blood.

71. (New) A substantially pure population of AC133 positive cells and progeny thereof, wherein said cells are obtained by a method for selection of a population of said cells comprising:

contacting a mixed population of cells with an antibody specific for AC133 antigen, and

selecting those cells that bind to said antibody.

72. (New) The method of claim 71, wherein AC133 antigen has the amino acid sequence SEQ ID NO: 2.

73. (New) The population of AC133 positive cells according to claim 71, wherein said antibody is a monoclonal antibody.

74. (New) The population of AC133 positive cells according to claim 73, wherein said monoclonal antibody is that produced by the hybridoma cell line ATCC HB12346.

75. (New) The population of AC133 positive cells according to claim 71, wherein said antibody is fluorochrome conjugated.